

Work Order ID 147335

Wednesday, June 08, 2016 2:54:42 PM

147335

Page 1

Item ID: D4463-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Tank Top

Start Date: 6/3/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/8/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan: MJSDate: JUN 10 2016

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D4463

001 D J

100

0.00

100

Waterjet

Memo

0.00

FLOW CNC Waterjet

Cut as per dwg

Prog rev: PDwg rev: P

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.00

Quality Control

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

PR 2016/08/2122PR 2016/08/21(2)DAE
38
9-89

AUG 24 2016

P.T.O.

DQA:

Date: 09/22/2016



QA Closed:

Date: SEP 14 2016

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

Work Order: 147335		DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Part No. DY463-1		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☒	Engineering ☐		
NCR No. 16-6032		Scrap ☒		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
		Suspected Unapproved ☐		Large Fab ☐	Composite ☐	Supplier ☐			
Date: 16-08-31	Step #: 100	QTY Effective: 1				MRB (QSI042) Approval			
Description Work Order Deviation		Disposition				DAS 9-89 16-08-31			
Operator debur too deep Operator debur hold too deep and debur hold on both side		Scrap / destroy no replace				Completed By DAS 9-89 16-08-14			
						Lead hand / Supervisor Approval Verification AUG 31 2016			
						QC / QA Coordinator Approval DAS 9-89 16-08-31			
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☒	Operator ☒	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Sub station ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☒	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER :							

Work Order ID 147335

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147335

Page 2

Item ID: D4463-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Tank Top

Start Date: 6/3/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 6/8/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
125		0.00							
125									
Small Fab	Memo	0.00				1X			16/08/16 DAS 36 9-89
Small Fab	C'SINK HOLES AS PER DWG								
126	QC5- Inspect part completeness to step on W/O	0.00							
126									
QC	Memo	0.00				1			DAS 36 9-89
Quality Control									
130	Chemical Conversion Coat per QSI005 4.1	0.00							
130									
HandFinish	Memo	0.00				(x1)			2016/09/01 BEB
Hand Finishing									

AUG 3 1 2016

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 147335

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147335

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Item ID: D4463-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Tank Top
Start Date: 6/3/2016 Start Qty: 2.00 ***2*** Cust Item ID:
Required Date: 6/8/2016 Req'd Qty: 2.00 ***2*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC7-Inspect Chemical Conversion Coat	0.00							
140									
QC	Memo	0.00				1			DAS 38 9-89 SEP 08 2016
Quality Control									
150	Identify as per dwg & Stock Location: <u>WA003</u>	0.00							
150									
Packaging	Memo	0.00				1			DAS 6 9-89 SEP 09 2016
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	0.00							DAS 21 9-89 SEP 09 2016
Quality Control									

DAS
21
9-89

SEP 09 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
243 88 88.6								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Picklist Print

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Page 1

Work Order ID: 147335

147335

Parent Item: D4463-1

D4463-1

Parent Item Name: Tank Top

Start Date: 6/3/2016

Required Date: 6/8/2016

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A 11.11.22 NEW ISSUE DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6S.063		Purchased		No		100	sf	743.1000	3.872	8.151579			

M6061T6S 063

6061-T6 .063 Sheet

PR 2016/08/21

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT021	407.1	
M133511	2.8	
M134377	4.9	
M134830	399.4	8.4
TPI	336	
M134496	192	
M134604	144	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

DART AEROSPACE LTD		Work Order:	147335
Description: Tank Top		Part Number:	D4463-1
Inspection Dwg: D4463 Rev: D		Page 1 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.098	+0.004/-0.001	Ø.100	✓		Dc-02	
Ø0.206	+0.005/-0.001	Ø.200	✓		Dc-01	
Ø1.00	+0.012/-0.001	1.001	✓		Tape	
1.15	+/-0.030	1.158	✓			
1.85	+/-0.030	1.865	✓			
2.20	+/-0.030	2.23	✓			
2.30	+/-0.030	2.313	✓			
5.29	+/-0.030	5.298	✓			
8.30	+/-0.030	8.309	✓			
8.93	+/-0.030	8.938	✓			
8.98	+/-0.030	8.988	✓			
9.31	+/-0.030	9.314	✓			
10.42	+/-0.030	10.421	✓			
11.26	+/-0.030	11.253	✓			
1.61	+/-0.030	1.617	✓			
1.68	+/-0.030	1.681	✓			
1.82	+/-0.030	1.831	✓			
3.41	+/-0.030	3.413	✓			
3.79	+/-0.030	3.794	✓			
6.43	+/-0.030	6.436	✓			
7.36	+/-0.030	7.368	✓			
7.80	+/-0.030	7.805	✓			
10.75	+/-0.030	10.752	✓			
11.38	+/-0.030	11.378	✓			
11.80	+/-0.030	11.806	✓			
13.27	+/-0.030	13.27	✓			
1.15	+/-0.030	1.161	✓			
3.00	+/-0.030	3.011	✓			
3.26	+/-0.030	3.265	✓			
7.00	+/-0.030	7.010	✓			
10.74	+/-0.030	10.751	✓			
11.00	+/-0.030	11.008	✓			
11.63	+/-0.030	11.639	✓			
15.29	+/-0.030	15.29	✓			
15.48	+/-0.030	15.48	✓			
19.48	+/-0.030	19.48	✓			
23.48	+/-0.030	23.48	✓			
23.67	+/-0.030	23.67	✓			
24.11	+/-0.030	24.11	✓			
27.46	+/-0.030	27.46	✓			

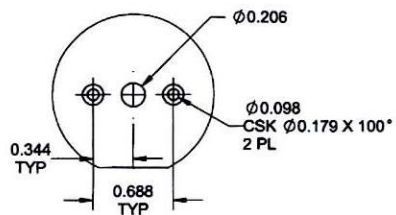
DART AEROSPACE LTD		Work Order:	177335
Description: Tank Top		Part Number:	D4463-1
Inspection Dwg: D4463 Rev: D		Page 2 of 2	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
28.08	+/-0.030	28.10	✓		Tape	
30.05	+/-0.030	30.05	✓			
33.35	+/-0.030	33.35	✓			
33.40	+/-0.030	33.40	✓			
35.33	+/-0.030	35.33	✓			
2.38	+/-0.030	2.384	✓			
3.82	+/-0.030	3.837	✓			
7.53	+/-0.030	7.533	✓			
11.14	+/-0.030	11.14	✓			
14.86	+/-0.030	14.86	✓			
15.76	+/-0.030	15.76	✓			
20.01	+/-0.030	20.01	✓			
23.95	+/-0.030	23.95	✓			
27.55	+/-0.030	27.55	✓			
31.06	+/-0.030	31.06	✓			
33.08	+/-0.030	33.08	✓			
33.71	+/-0.030	33.71	✓			
0.063	+/-0.010	0.063	✓			

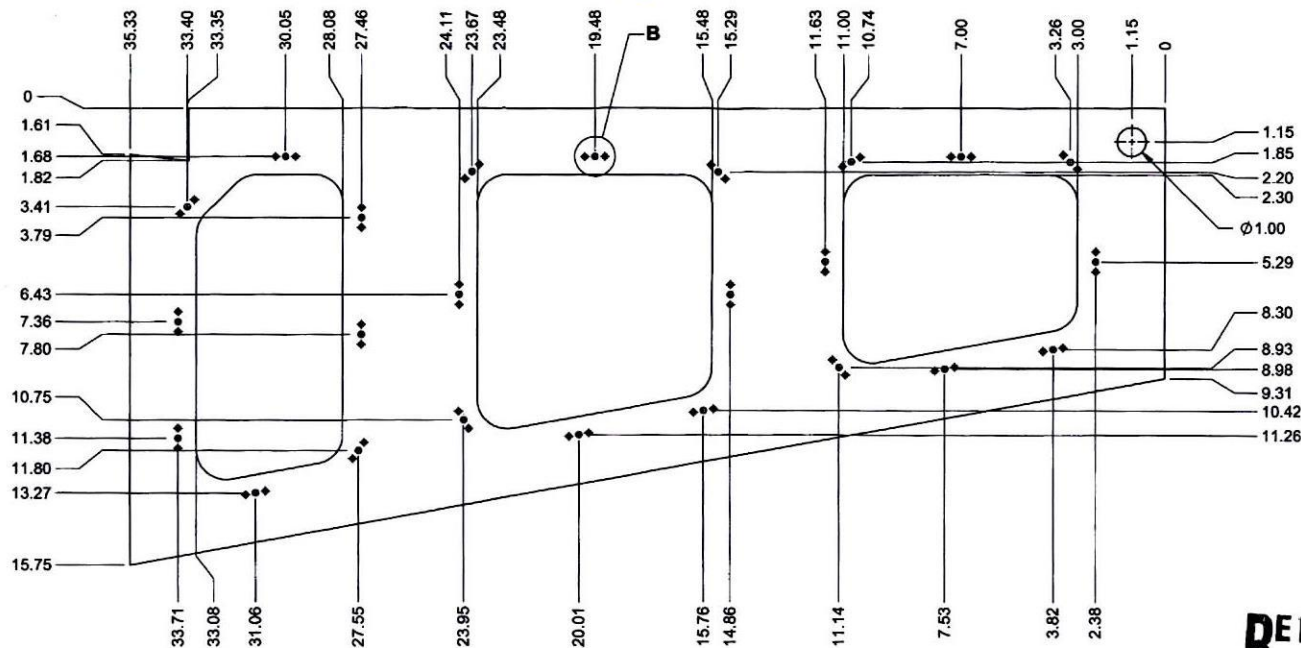
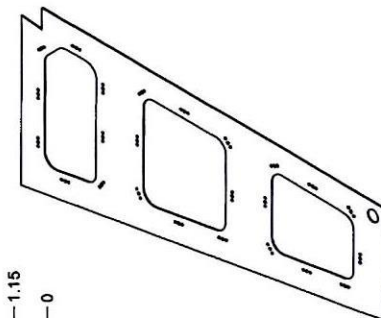
Measured by: PR/oa	Audited by: 38	Preliminary Approval:
Date: 2016/08/21	Date: AUG 24 2016	Date:

Rev	Date	Change	Revised by	Approved
A	12.02.01	New Issue P/O D4463-041	KJ	
B	12.05.15	Dimensions updated per Dwg Rev C	KJ	
C	14.10.08	Dwg Rev updated	KJ	



DETAIL B
(24 PL)

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO 147335 MLJ 1606-10



D4463-1 TANK TOP

NOTES:

- 1) MATERIAL: 6061-T6/T62 ALUMINUM SHEET, 0.063 THICK
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027 OR ASTM B209
REF DART SPEC M6061T6S.063
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 1.70 lbs

RELEASED
2014-06-11

APPROVED

DESIGN	ML	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	ML		
CHECKED	AP	DRAWING NO.	REV. D
MFG. APPR.	JLM	D4463	SHEET 2 OF 14
APPROVED	MP	TITLE	SCALE
DE APPR.	DS	AUX TANK	NTS
DATE	14.05.13	COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	